National Institute of Environmental Health Sciences

Does pneumothorax occurrence correlate with a change in the weather?

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Abstract:

Purpose. There has been speculation that weather changes correlate with the incidence of spontaneous pneumothorax, although this has not been verified. Moreover, there are no significant data available on the meteoropathic pneumothorax in Asia. The aim of this study was to investigate the possible correlation and to compare our results to those of the United States and Europe. Methods. From January 2000 to December 2009, 317 spontaneous pneumothorax cases with clear dates of onset were treated in our institution. Using the meteorological data of Fukuoka, Japan, the days with and without an occurrence of pneumothorax were statistically compared in terms of atmospheric pressure, the amount of precipitation, temperature, humidity, hours of sunshine, and occurrence of a typhoon and lightning. Results. Multivariate analysis revealed that a decrease in the hours of sunshine, an increase in mean temperatures 2 days before the incidence, and the days following a day with lightning were all significantly correlated with the occurrence of pneumothorax (P Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 0.0083, 0.0032, 0.0351, respectively). However, typhoons, as an "unusual" weather condition, did not infl uence the incidence of pneumothorax (P Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 0.983). Conclusions. Our results show strong similarities with reports from European countries despite the different climates. We conclude that the occurrence of pneumothorax appears to correlate with some weather conditions in Japan. © Springer 2011.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Extreme Weather Event, Meteorological Factors, Meteorological Factors, Precipitation, Solar Radiation, Temperature

Extreme Weather Event: Hurricanes/Cyclones, Other Extreme Event

Extreme Weather Event (other): Lightning

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: Other Asian Country

Other Asian Country: Japan

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Respiratory Effect

Respiratory Effect: Other Respiratory Effect

Respiratory Condition (other) : Idiopathic spontaneous pneumothorax

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content